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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,302	12/21/2000	Rajiv Bhatnagar	22109.0012U1	1835
23859	7590	03/15/2005	EXAMINER	
NEEDLE & ROSENBERG, P.C.			BARNES, CRYSTAL J	
SUITE 1000			ART UNIT	
999 PEACHTREE STREET			PAPER NUMBER	
ATLANTA, GA 30309-3915			2121	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/746,302

Applicant(s)

BHATNAGAR, RAJIV

Examiner

Crystal J. Barnes

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 7 and 12 is/are rejected.
- 7) ☒ Claim(s) 2-6 and 8-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The following is a Non-Final Office Action in response to the Request for Continued Examination (RCE) received on 31 January 2005. Claims 1-12 have been amended. Claims 1-12 remain pending in this application.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31 January 2005 has been entered.

#### ***Response to Arguments***

3. Applicant's arguments, see Remarks page 14 2<sup>nd</sup> paragraph, filed 31 January 2005, with respect to the rejections of claims 1-12 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejections have been

withdrawn. However, upon further consideration, a new ground of rejections is made in view of USPN 5,818,428 to Eisenbrandt et al.

*Claim Objections*

4. Claims 1-12 are objected to because of the following informalities:
    - a. Claim 1 - (page 2, line 8) "the said" should be "said" to correct redundancy should be deleted.
    - b. Claims 2 through 12 (line 1) - the controller in the preamble of the dependent claims should be the same as the controller in the independent claim. "A Configurable Electronic Controller" should be "A hardware configurable electronic controller".
    - c. Claim 3 (page 6 line 4) - "the Electronic Appliance Controller" should be "the hardware configurable electronic controller".
    - d. Claim 7 (page 11 line 2) - "wherein it" should be deleted.
- Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,818,428 to Eisenbrandt et al. in view of logical reasoning.

As per claim 1, the Eisenbrandt et al. reference discloses a hardware configurable electronic controller for appliances comprising: a Non-Volatile Memory (see column 4 lines 1-2, "ROM, RAM" and column 4 lines 64-67, "memory 64") containing configuration data (see column 5 lines 12-15, "data 74"); a Central Control Unit (see column 3 lines 30-35, "control modules 15, 16") configurable in hardware (see column 3 lines 50-52, "various sensors 34 and controls 36") to perform the basic desired processing and control of the appliance ("appliance 10"), the configuration data ("data 74") supplied by said Non-Volatile Memory ("ROM, RAM, memory 64"), one set of inputs of said Central Control Unit ("control modules 15, 16") are connected to the outputs of an Input Interface Unit (see column 7

lines 30-31, "analog inputs 204, digital inputs 209") which receives these signals from various sensing elements ("various sensors 34) in the appliance ("appliance 10") and conditions (see column 4 lines 15-17, "sensor signal conditioning") these signals using configurable hardware ("operational amplifiers 206") for further processing by said Central Control Unit ("control modules 15, 16"), one set of outputs of said Central Control Unit ("control modules 15, 16") are fed back to said Input Interface Unit ("analog inputs 204, digital inputs 209") for controlling its internal operation, a second set of inputs of said Central Control Unit ("control modules 15, 16") receive user input data (see column 3 lines 36-43, "keyboard 24") from the outputs of a User Interface Unit (see column 3 lines 44-47, "input/display module 30"), a second set of outputs of said Central Control Unit ("control modules 15, 16") are fed back to said User Interface Unit ("input/display module 30") as signals for outputting data (see column 3 lines 59-61, "display 22") to the user by visual and audible means, as well as for controlling its internal operation, a third input of said Central Control Unit ("control modules 15, 16") is connected to one output of a Load Interface Unit (see column 3 lines 51-52, "controls 36") to provide data (see fig. 9 "receive") on load conditions (see column 4 lines 9-11, "driver integrated circuits 202"), a third set of outputs from said

Central Control Unit ("control modules 15, 16") are connected to the inputs of said Load Interface Unit ("driver integrated circuits 202") for driving (see fig. 9 "transmit") the actuating means (see column 61-63, "load switching") in the appliance ("appliance 10") for controlling its operation, a fourth input of said Central Control Unit ("control modules 15, 16") receives power supply condition signals ("power supply") from a Supply Interface Unit (see column 4 lines 4-5, "power supply 210"), said Non-volatile Memory Unit (see column 7 lines 29-31, "RAM memory") provides non-volatile storage of data ("memory storage locations") and is connected to main circuit blocks consisting of said Central Control Unit ("control modules 15, 16"), Input Interface Unit ("sensors 34, analog inputs 204, digital inputs 209"), User Interface Unit ("input/display module 30"), Load Interface Unit ("loads 36, driver integrated circuits 202"), and Supply Interface Unit ("power supply 210"), the outputs of a Clock Generator circuit (see column 4 lines 1-6, "clock, watchdog timer 212") are connected to one input of each of said main circuit blocks and provides clock signals required for their operation, the output of a Reset circuit (see column 4 lines 1-6, "power on reset 214") is connected to one input of each of said main circuit blocks and produces a reset signal required for their proper initialization, the arrangement between the components of the main

circuit blocks is such that said Central Control Unit ("control modules 15, 16") receives sensed parameter data supplied by the various sensing devices ("sensors 34") in the appliance ("appliance 10") from said Input Interface Unit ("sensors 34, analog inputs 204, digital inputs 209"), user requirement data ("input devices") from said User Interface Unit ("input/display module 30"), load conditions data ("receive") from said Load Interface Unit ("loads 36, driver integrated circuits 202"), and the supply conditions data ("power supply") from said Supply Interface Unit ("power supply 210"), and processes all this data in accordance with its configured functionality (see column 3 lines 22-26, "configuration"), and then applies signals ("transmit") to the inputs of said Load Interface Unit ("loads 36, driver integrated circuits 202") for operating the actuating devices ("load switching") in the appliance ("appliance 10") for controlling its operation, and to the inputs ("display 22") of said User Interface Unit ("input/display module 30") for providing feedback to the user.

The Eisenbrandt et al. reference does not expressly disclose the arrangement between the components of the main circuit blocks of the present invention.



However, it would have been logically to one of ordinary skill in the art to modify user configurable components of a control system to include generic modules/units to facilitate customization by providing various interfaces separated by functionality.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the appliance control system taught by the Eisenbrandt et al. reference with generic modules/units to facilitate customization by providing various interfaces separated by functionality.

One of ordinary skill in the art would have been motivated to modify the appliance control system with generic modules/units to ease the difficulty of user customization regardless of the specific appliance of the control system.

As per claim 12, the Eisenbrandt et al. reference discloses said Clock Generator is an oscillator (see column 4 lines 2-4, "internal timer, clock") with a frequency preferably in the range 32 KHz to 25 MHz ("not shown, but well known in the art").

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,818,428 to Eisenbrandt et al. in view of logical reasoning as applied to claims 1 and 12 above, and further in view of USPN 5,621,662 to Humphries et al.

As per claim 7, the Eisenbrandt et al. reference does not expressly disclose further includes a Network Interface Unit that is connected to another output from the said Central Control Unit and provides an input to the said Central Control Unit for exchanging data between an external network and the said Central Control Unit.

The Humphries et al. reference discloses

(see figure 3 and column 6 lines 39-41, "The network comprises a host computer 20 connected through a host interface 24 to a plurality of nodes ... the nodes may have other hardware devices connected to them ...")

(see column 17 lines 40-46, "The interface ... easy to use, yet is flexible enough to allow users to make changes in the system ...")

(see column 17 lines 50-52, "Devices are ... adjustable devices and on/off devices.")

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the appliance control system taught by the

Eisenbrandt et al. reference with the home automation system taught by the Humphries et al. reference to include the consumer appliance as an additional device connected to the plurality of nodes in the home.

One of ordinary skill in the art would have been motivated to modify the appliance control system with the home automation system to include the consumer appliance as an additional device connected to the plurality of nodes in the home to provide centralized control of subsystems/devices and an interface for connecting to a network.

*Allowable Subject Matter*

8. Claims 2-6 and 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

As per claim 2, the prior art of record taken alone or in combination fails to teach an arrangement such that said Configurable Logic Circuit using data supplied

by said Memory block, said Counters and Timers block and said RTC circuit to provide supply signals required to update the data stored in said Memory block, said Counters and Timers block and said RTC circuit for use in subsequent processing.

As per claim 3, the prior art of record taken alone or in combination fails to teach an arrangement such that signals are applied one-at-a-time to the input of said Noise Filter for filtering and supplying to said Central Control Unit for processing.

As per claim 4, the prior art of record taken alone or in combination fails to teach an arrangement such that signals are applied one-at-a-time to the input of a Noise Filter for filtering and supplying to said Central Control Unit for processing while simultaneously said Display and Audio Driver circuit drives the external display and audio output devices in accordance with the data supplied by said Central Control Unit.

As per claim 5, the prior art of record taken alone or in combination fails to teach an arrangement such that load current data received by said Load Current Sensors is converted to digital form by said Load Current Sense Circuit, compared with reference data supplied from said Central Control Unit by said Digital

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Comparator and supplied to said Central Control Unit which furnishes signals for controlling the operation of Switch Drive Circuits through Latches.

As per claim 6, the prior art of record taken alone or in combination fails to teach an arrangement such that sensed supply voltage is converted to digital form by said Supply Voltage Sense circuit and compared by said Digital Comparators with reference data supplied by said Non-Volatile Memory and the results of the comparison are latched by said Latch and furnished to a Central Control Unit as supply condition data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal J. Barnes whose telephone number is 571.272.3679. The examiner can normally be reached on Monday-Friday alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571.272.3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
CJB

14 March 2005